Meade® CCD-Photo-Visual Flip-Mirror Systems

An essential accessory for CCD imaging.

A major advance in accessories specifically designed for CCD imagers *of any brand or chip size,* Meade flip-mirror systems permit a dramatic reduction in imager setup time. The basic function of the Flip-Mirror System is to allow the CCD imager or astrophotographer to inspect, center, compose, and focus the telescopic image immediately prior to the (CCD or photographic) image being taken. Threaded to the rear cell of any Meade LX-Series mirror-lens telescope *(p. 16)* or to other Schmidt-Cassegrain telescope brands, #644 and #647 Flip-Mirrors greatly facilitate these operations.

Meade #647 Flip-Mirror System. Shown with Pictor 216XT imaging camera and Plössl 25mm Framing Ocular (p. 107).

Applications: Flip the mirror *down* to center the image while viewing with an eyepiece at 90°; flip the mirror *up* to pass light on to the CCD chip or, as discussed below, to the film plane of a 35mm camera. A fine helicoid focusing thread allows for precise focusing of the the eyepiece to the visual image in the *down* mode, and a lock-ring fixes this visual focus.

Optical Flat Mirrors: Meade Flip-Mirror Systems incorporate the same high-resolution, UHTC-coated Pyrex® optical flat mirrors used with Meade advanced telescope models, including LX-Series Schmidt-Cassegrains. The result is that Meade flip-mirrors may be equally well used for normal visual observing with the telescope, without requiring removal of the flip-mirror from the telescope.

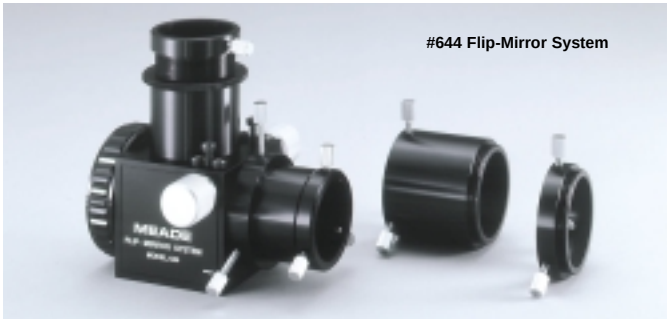
Flip-Mirror Alignment: Each flip-mirror system includes 2-axis mirror adjustment screws and locks for precise image centering. Once set, mirror alignment remains fixed for future applications.

CCD Barrel Adapter; Extension Tubes: For CCD imagers with standard 1.25" barrels, a barrel adapter is included for attachment of the CCD imager to the flip-mirror. Alternately, CCD's with T-thread interfaces (including all Meade Pictor CCD models) can be attached using one of the two extension tubes included with each unit. The barrel adapter and both of the extension tubes attach to the flip-mirror unit by means of a bayonet fitting, permitting rotation of the barrel adapter or extension tube for correct image composition on the CCD chip or camera film.

35mm Astrophotography: Use the short extension tube (with the appropriate T-Mount) for astrophotography with your 35mm camera body, which replaces the CCD imager at the rear of the flip-mirror.

Technical Note: *Owners of large-chip CCD imagers (e.g., Meade Pictor 1616XT or 1616XTE) and flip-mirror purchasers intending to use the unit for astrophotography with a 35mm camera body are advised to purchase the larger Model 647 Flip-Mirror System, as the smaller Model 644 may result in image vignetting in these instances.*

Specifications: Model 644 Flip-Mirror System — Accepts any 1.25" eyepiece. Mirror clear aperture: 22mm. Includes two extension tubes. Use with Meade Pictor 208XT, 216XT, or 416XTE; SBIG ST-4 through ST-7; Apogee AP1 or AP1E; or other similar-size CCD's; or for visual observing with 1.25" eyepieces.



Specifications: Model 647 Flip-Mirror System — Includes 2" eyepiece-holder and 1.25" eyepiece adapter permitting use of either 1.25" or 2" eyepieces. Mirror clear aperture: 40mm. Includes two extension tubes. Recommended for full-field 35mm astrophotography or for CCD imagers of any chip dimensions, including all Meade Pictor Series through 1616XTE; SBIG ST-4 through ST-10; Apogee AP-series; Finger Lakes CM-series; or other imager brands, or for visual applications with 1.25" or 2" eyepieces.

#157 1.25" Adapter: Permits use of either flip-mirror model on telescopes with 1.25" eyepiece-holders. (Requires approx. 2" additional focus travel with Model 644 Flip-Mirror and approx. 3" additional focus travel with Model 647.)